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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,988	03/16/2001	Koichi Masukura	204905US2SRD	5115

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EXAMINER

HARRISON, CHANTE E

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 08/10/2004

11

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/808,988

Applicant(s)

MASUKURA ET AL.

Examiner

Chante Harrison

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-20 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-20 and 22-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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DETAILED ACTION

1. This action is responsive to communications: Amendment A, filed on 5/19/04.

This action is made ***FINAL***.

2. Claims 1-14, 16- 20 and 22-26 are pending in the case. Claims 1, 12, 16, 20, 22 and 26 are independent claims.

Drawings

1. The proposed drawing corrections and/or the proposed substitute sheets of drawings, filed on 5/19/04 have been approved by Examiner. Thus, the objection to the drawings for including and/or not including reference signs mentioned in the description is withdrawn.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-14, 16-20 and 22-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Jerome Lengyel, U.S. Patent 6,573,890 B1, 6/2003.

As per independent claim 1, Lengyel discloses approximating the object region in each of the frames with a polygon, the polygon having vertexes (col. 4, ll. 43-56); associating the vertexes in each of the frames with the respective vertexes in an adjacent frame of each of the frames (col. 15, ll. 11-20); obtaining trajectories linking the vertexes associated together based on the time-series variation of the frames (col. 8, ll. 56-67; col. 16, ll. 37-50); and generating the object region data based on the trajectories (col. 20, ll. 4-21).

As per dependent claims 2, 17 and 23, Lengyel discloses the vertexes in each of the frames are associated with the respective vertexes in the adjacent frame (col. 15, ll. 11-

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20) such that a distance between the vertexes in each of the frames and the respective vertexes in the adjacent frame is minimum (col. 8, ll. 56-67; col. 21, ll. 53-67).

As per dependent claim 3, Lengyel discloses the distance between the vertexes in each of frames and the respective vertexes in the adjacent frame is calculated after a center of gravity of the polygon in the each of the frames coincides with a center of gravity of the polygon in the adjacent frame (col. 21, ll. 53-67; col. 23, ll. 55-64; col. 24, ll. 19-24).

As per dependent claims 4, 7, 10 and 13, Lengyel discloses each of trajectories is approximated by a predetermined function, and the object region data is generated by using a parameter for the function (col. 9, ll. 20-35; col. 15, ll. 20-30).

As per dependent claims 5, 8, 11 and 14, Lengyel discloses the object region data includes position data of the vertexes of each of the frames and association data indicting correspondence of the vertexes between the frames (col. 15-16, ll. 53-9).

As per dependent claims 6, 18 and 24, Lengyel discloses the associating the vertexes with the respective vertexes comprises estimating vertexes in the adjacent frame based on the vertexes in the frames preceding to the adjacent frame (col. 15, ll. 11-20), and selecting the vertexes in the adjacent frame, that are closest to the estimated vertexes (col. 8, ll. 56-67; col. 21, ll. 53-67).

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As per dependent claims 9, 19 and 25, Lengyel discloses the vertexes in each of frames have a characteristic quantity and the vertex in each of the frames and the vertex in the adjacent frame which have the closest characteristic quantity are associated with each other (col. 16, ll. 10-24).

As per independent claim 12, Lengyel discloses approximating the object region in each of the plurality of frames with a polygon (col. 4, ll. 43-56); estimating a plurality of vertexes of the polygon in a given frame based on trajectory data indicating vertexes of the polygon from a first frame to an immediately preceding frame of the given frame (col. 15, ll. 11-20); modifying the plurality of vertexes estimated so as to be associated with the object region in the given frame (col. 16, ll. 37-50); obtaining trajectory data indicating vertexes of the polygon from the first frame to the given frame (col. 8, ll. 56-67); and generating the object region data based on the trajectory data indicating vertexes of the polygon from the first frame to the given frame (col. 20, ll. 4-21).

As per independent claim 16, Lengyel discloses an apparatus for implementing the method of claim 1. Therefore the rationale applied in the rejection of claim 1 applies herein.

As per independent claim 20, Lengyel discloses an apparatus for implementing the method of claim 12. Therefore the rationale applied in the rejection of claim 1 applies herein.

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As per independent claim 22, Lengyel discloses an article of manufacture for implementing the method of claim 1. Therefore the rationale applied in the rejection of claim 1 applies herein.

As per independent claim 26, Lengyel discloses an article of manufacture for implementing the method of claim 12. Therefore the rationale applied in the rejection of claim 1 applies herein.

Response to Arguments

3. Applicant's arguments filed 5/19/04 have been fully considered but they are not persuasive.

Applicant argues (pp. 4-5, Para 2) Lengyel fails to teach the object region is approximated with a polygon.

In reply, Lengyel's disclosure of an animated object expressed by a 3D vertex positions in a mesh that is transformed from frame to frame is interpreted as approximating regions of the object with a polygon in that a mesh is a polygon approximation of a surface.

Applicant argues (pp. 4-5, Para 2) Lengyel fails to teach associating the vertexes in each of the frames with the respective vertexes in an adjacent frame of each of the frames.

In reply, Lengyel teaches maintaining and sorting columns of geometric connectivity data among 3D positions, such that corresponding neighboring elements (e.g. vertexes) that have coherent motion also have similar data (col. 16, ll. 3-9, 19-21), where a column is representative of position data in a frame. Thus, Lengyel discloses

associating corresponding vertexes, representing position data of a point in a mesh/polygon, from frame to frame.

With respect to claims 2, 17 and 23 Applicant argues (pp. 5, Para 2) Lengyel does not teach associating vertexes in adjacent frames such that the distance between vertexes in adjacent frames is minimum.

In reply, Lengyel teaches performing geometric prediction of a set of elements, e.g. vertexes, by computing the difference between corresponding elements and sorting/modifying the elements such that those elements that are most similar (e.g. have the least difference, which relates to a minimum displacement/distance of movement from the original/reference element).

With respect to claims 12, 20 and 26 Applicant argues (pp. 6, Para 1), Lengyel does not teach estimating a plurality of vertexes of the polygon in a given frame based on trajectory data indicating vertexes of the polygon from a first frame to an immediately preceding frame and modifying the plurality of vertexes estimated so as to be associated with the object region in the given frame.

In reply, Lengyel teaches performing geometric prediction of a set of elements, e.g. vertexes, by computing the difference between corresponding elements and sorting/modifying the elements such that those elements that are most similar (e.g. have the least difference, which relates to a minimum displacement/distance of movement from the original/reference element) and coherent motion are associated (col. 15, ll. 53-55; col. 15-16, ll.65-5; col. 16, ll. 12-20).

Thus, the rejection in view of Lengyel is maintained.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chante Harrison whose telephone number is 703-305-3937. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chante Harrison
Examiner
Art Unit 2672

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JEFFERY BRIER
PRIMARY EXAMINER